REMARKS

Claims 9 and 11 have been previously canceled. Claims 1, 3 through 5, 12, 15, 16, and 21 have been amended. Claims 1 through 8, 10, and 12 through 21 remain in the application.

35 U.S.C. § 102

Claims 1 through 8, 10, and 12 through 21 were rejected under 35 U.S.C. § 102(b) as being anticipated by "Emulation of a Material Delivery System", by Todd LeBaron and Kelly Thompson. Applicants respectfully traverse this rejection.

The "Emulation of a Material Delivery System", by Todd LeBaron and Kelly Thompson, discloses emulation of a complex pick and pack system. A material handling system consists of conveyor sections which continuously move carriers around a closed loop that connects all pick and pack stations. Routing logic, PLC or PC control software, sequencing algorithms and more can be integrated, tested, and debugged within a simulation environment. Emulation has been used for a Rapistan Systems Project to test, debug, and optimize complex algorithms and control logic. Emulation of the Rapistan control system for this project integrates a simulation model with the actual control system. The simulation model provides the output for evaluating control logic and algorithms. The emulation used at Rapistan Systems was able to prove that the system could handle the projected growth in daily orders. Emulation provides the graphical and statistical output needed to accurately evaluate different algorithms and control logic. LeBaron et al. does not disclose playing a simulation model by a PLC logical verification system on a computer and allowing a user to visually see flow of a part through the manufacturing line, and generating PLC code if a part flow represented in the simulation model is

correct. LeBaron et al. also does not disclose using the generated PLC code and implementing the manufacturing line according to the part flow simulation model.

In contradistinction, independent claim 1, as amended, clarifies the invention claimed as a method of part flow for a programmable logic controller logical verification system. The method includes the steps of constructing a simulation model of a manufacturing line using a computer, playing the simulation model by a PLC logical verification system on the computer and allowing a user to visually see flow of a part through the manufacturing line, and determining if the part flow represented in the simulation model is correct. The method also includes the steps of generating PLC code if the part flow represented in the simulation model is correct, using the generated PLC code, and implementing the manufacturing line according to the part flow simulation model. Independent claims 12 and 21 have been amended similar to claim 1 and include other features of the present invention.

A rejection grounded on anticipation under 35 U.S.C. § 102 is proper only where the subject matter claimed is identically disclosed or described in a reference. In other words, anticipation requires the presence of a single prior art reference which discloses each and every element of the claimed invention arranged as in the claim. In re Arkley, 455 F.2d 586, 172 U.S.P.Q. 524 (C.C.P.A. 1972); Kalman v. Kimberly-Clark Corp., 713 F.2d 760, 218 U.S.P.Q. 781 (Fed. Cir. 1983); Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co., 730 F.2d 1452, 221 U.S.P.Q. 481 (Fed. Cir. 1984).

LeBaron et al. does not disclose or anticipate the claimed invention of claims 1 through 8, 10, and 12 through 21. Specifically, LeBaron et al. merely discloses an emulation of a material delivery system in which routing logic, PLC or PC control software, sequencing algorithms and more can be integrated, tested, and debugged within a simulation environment. LeBaron et al. lacks playing a simulation model by a PLC logical verification system on a

computer and allowing a user to visually see flow of a part through the manufacturing line and generating PLC code if a part flow represented in the simulation model is correct. In LeBaron et al., there is no PLC logical verification system and no PLC code is generated. The PLC logical verification system is not an emulator. LeBaron et al. also lacks using the generated PLC code and implementing the manufacturing line according to the part flow simulation model. In LeBaron et al., while LeBaron et al. mentions PLC or PC control software can be tested and debugged within a simulation environment, there is no part flow for a programmable logic controller logical verification system and there is no generated PLC code that is used in implementing a manufacturing line.

As such, LeBaron et al. fails to disclose the combination of a method of part flow for a programmable logic controller logical verification system including the steps of constructing a simulation model of a part flow in a manufacturing line using a computer, playing the simulation model by a PLC logical verification system on the computer and allowing a user to visually see flow of a part through the manufacturing line, determining if the part flow represented in the simulation model is correct, generating PLC code if the part flow represented in the simulation model is correct, using the generated PLC code, and implementing the manufacturing line according to the part flow simulation model as claimed by Applicants. Therefore, it is respectfully submitted that claims 1 through 8, 10, and 12 through 21 are allowable over the rejection under 35 U.S.C. § 102(b).

Based on the above, it is respectfully submitted that the claims are in a condition for allowance, which allowance is solicited.

Respectfully submitted,

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